

WHAT WE CLAIM IS:

1. A waste disposal service panel assembly comprising:
  - a housing;
  - a waste drain valve coupled to said housing, said waste drain valve comprising:
    - an outlet within said housing, where said outlet is configured to removably couple to a waste drain hose for drainage of a waste collection tank; and
    - an inlet configured to couple to said waste collection tank; and
  - a service panel door pivotally coupled to said housing, said service panel door comprising:
    - an outer surface configured to substantially match an outer contour of an aircraft's skin; and
    - an inner surface having an outer cap configured and dimensioned to mate with said outlet to seal said outlet when said service panel door is in a closed position.
2. The waste disposal service panel assembly of claim 1, wherein said housing comprises a substantially tubular side wall and a base near one end of said side wall.
3. The waste disposal service panel assembly of claim 2, wherein said housing further includes a rinse/fill valve and handle assembly coupled to said housing at least partially within said base.
4. The waste disposal service panel assembly of claim 1, wherein said housing further includes waste drain valve components within said housing selected from a group consisting of: handles, levers, hinges, locking mechanisms, springs, clasps, and fasteners.
5. The waste disposal service panel assembly of claim 4, wherein said housing is configured and dimensioned such that said service panel door cannot close and lock if at least one of said waste drain valve components is not closed and locked.

6. The waste disposal service panel assembly of claim 1, wherein said housing further includes a rinse/fill valve and handle assembly coupled to said housing.
7. The waste disposal service panel assembly of claim 1, wherein said waste drain valve further comprises an inner door pivotally mounted within said outlet.
8. The waste disposal service panel assembly of claim 1, wherein said service panel door further includes a handle configured to lock in the closed position, and when properly stowed and locked, a distal portion of said handle is positioned at a 7 to 8 o'clock position relative to the aft portion of the aircraft being at 9 o'clock.
9. The waste disposal service panel assembly of claim 8, where when said handle is open, said service panel door opens under its own weight and both said handle and said service panel door hang open at a 7 to 8 o'clock position relative to the aft portion of the aircraft being at 9 o'clock.
10. A waste disposal service panel assembly of claim 1, wherein at least two components are manufactured as a single unit, said components selected from a group consisting of: said housing, said waste drain valve, a housing of said waste drain valve, and a rinse/fill valve housing.
11. A waste disposal service panel assembly of claim 1, wherein said outer cap is incorporated into said service panel door.
12. A waste disposal service panel assembly of claim 1, wherein said outer cap is coupled to said underside of said service panel door.
13. A waste disposal service panel assembly comprising:
  - a housing comprising a substantially tubular side wall and a base near one end of said side wall;
  - a waste drain valve at least partially mounted within said housing through said base, where said waste drain valve includes an outlet positioned within said housing and an inlet configured to couple to a waste collection tank;
  - a service panel door pivotally coupled to said housing near an end of said side

wall remote from said base, where said service panel door comprises:

an outer surface configured to substantially match an outer contour of an aircraft's skin; and

an outer cap coupled to an inner surface of said service panel door, said outer cap configured and dimensioned to mate with said outlet to seal said outlet when said service panel door is closed.

14. The waste disposal service panel assembly of claim 13, wherein said housing further includes a rinse/fill valve and handle assembly coupled to said housing.

15. The waste disposal service panel assembly of claim 13, wherein said housing, is configured and dimensioned such that said service panel door cannot close if at least one waste drain valve component within said housing is not in a closed position.

16. The waste disposal service panel assembly of claim 13, wherein said waste drain valve further comprises an inner door pivotally mounted within said outlet.

17. The waste disposal service panel assembly of claim 13, wherein said service panel door further includes a handle configured to lock in the closed position, and when properly stowed and locked, a distal portion of said handle is positioned at a 7 to 8 o'clock position relative to the aft portion of the aircraft being at 9 o'clock.

18. The waste disposal service panel assembly of claim 17, where when said handle is open, said service panel door opens under its own weight and both said handle and said service panel door hang open at a 7 to 8 o'clock position relative to the aft portion of the aircraft being at 9 o'clock.

19. A waste disposal service panel assembly of claim 13, wherein at least two components are manufactured as a single unit, said components selected from a group consisting of: said housing, said waste drain valve, a housing of said waste drain valve, and a rinse/fill valve housing.

20. A waste disposal service panel assembly of claim 13, wherein said outer cap is incorporated into, or coupled to, said underside of said service panel door.